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THE DWAF WATER SERVICES IAM STRATEGY POSITIONED WITHIN THE CONTEXT OF OTHER MAJOR NATIONAL IAM INITIATIVES**Nino Manus, Kribbs Moodley, Kevin Wall, Louis Boshoff and Arno Ottermann**

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ABSTRACT

This paper describes the steady progress that the Department of Water Affairs and Forestry (DWAF) has been making with formulating a national water services infrastructure asset management (IAM) strategy. A "scan" of the state of water services infrastructure and the state of its asset management, is long complete. 2006/2007 saw the completion of a process of identifying elements needed for an enabling environment to ensure sound asset management. Since then DWAF, with the assistance of an external team, has been identifying priority strategic actions, taking cognizance of its mandated responsibility and what it needs to do within its own sphere and also in conjunction with others, particularly with other national government departments.

DWAF's efforts complement and are complemented by other national IAM initiatives.

INTRODUCTION

Two papers presented at the 2006 WISA Conference (Wall et al 2006; Manus et al 2006) described the progress that the Department of Water Affairs and Forestry (DWAF) had by then made in formulating a national water services infrastructure asset management (IAM) strategy. At that stage, the results of only Phase 1, a desktop strategic study, a "scan", of the state of South Africa's water services infrastructure and the state of its asset management, were available.

Phase 2 of this project was completed early in 2007. Thus the first part of this paper describes Phase 2, a process of fact-finding, identifying elements needed for an enabling environment to ensure sound asset management.

The second part of the paper describes progress with the next phase (and, at the time of writing, the current initiative), in which DWAF, with the assistance of an external team, has been identifying priority strategic actions, taking cognizance of its mandated responsibility and what it needs to do within its own sphere and also in conjunction with others, particularly with other national government departments. Having to all intents and purposes completed that phase, DWAF is now formulating, programming and commencing the more detailed actions, and in all of this cooperating with key stakeholders such as National Treasury, Department of Provincial and Local Government (DPLG) and South African Local Government Association (SALGA).

DWAF's efforts complement and are complemented by other national IAM initiatives. Among these are the National Infrastructure Maintenance Strategy (approved by Cabinet in 2006) ("NIMS") DPW et al 2006), the DPLG's Guidelines for Infrastructure Asset Management in Local Government, and National Treasury's measures to increase provincial and local government accountability for assets, as well as initiatives by WISA, IMESA, and other institutions.

PHASE 2: FACT-FINDING TO SOLUTION-IDENTIFYING

Phase 1's findings were the foundation upon which the work of Phase 2 was built.

Phase 2 ("proceeding from fact-finding to solution-identifying", as the CSIR team termed it) commenced with a process of identifying the key factors that drive the existing state of water services infrastructure and the state of its management, learning this from the Phase 1 work and from meetings with sector experts. This phase involved not just problem identification, but also analysis and classification of problems. It led to identification of elements needed for an enabling environment to ensure improved infrastructure asset management, and also started to broadly identify which institution should be responsible for leading each element of the improvement process.

More than 400 generic challenges were identified. They were then rigorously analysed and classified into "challenge areas". This analytical approach facilitated better understanding of individual challenges, as well as of the bigger picture in terms of priority needs.

For the record, the challenge areas are:

- Planning problems
- Technical/design problems
- Construction/installation problems
- Infrastructure operation problems
- Repair/maintenance/refurbishment problems
- Inadequate skills for infrastructure asset management
- Statistical/management problems
- Financial problems
- Social/cultural problems
- Economic/poverty problems
- Natural environment problems
- Political/tactical problems
- Legislative/guidance/incentive.

Within these areas, the following priority issues were identified:

- Life-cycle management (service delivery does not end with infrastructure projects)
- Knowing the infrastructure (including asset register)
- Implementing infrastructure asset management processes and procedures
- Clear responsibility and accountability for infrastructure asset management
- Hands-on approach (and also that one size does not fit all)
- Water services infrastructure asset management is a part of total asset management
- Funding requirements and processes for infrastructure asset management
- Infrastructure asset management staffing requirements (number and skills).

Solution types:

The Phase 2 analysis then proceeded from challenges to the identification of a solution¹ for each of the 400-plus generic challenges. Evaluation and finding commonality of solutions enabled classification of solutions into one or other of 9 "solution types", viz:

- Awareness
- Finance
- Guidelines
- HR (i.e. including skills and appointments)
- Legal and procurement
- Monitoring and evaluation
- Management and leadership
- Operation and maintenance
- Technical.

The following table shows the count of solutions per solution type (DWAF 2006, page 22):

Solution type	Count	% of total
Awareness	27	7%
Finance	57	14%
Guidelines	26	6%
Human resources (HR)	119	29%
Legal and procurement	34	8%
Monitoring and evaluation	12	3%
Management and leadership	61	15%
Operation and maintenance	31	8%
Technical	38	9%

¹ Note that "identification of a solution" was simply that -- i.e. the solution was identified and described briefly -- not in detail.

TOTAL	405	100%
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These identified solutions were categorised "Priority 1", "Priority 2", or "Priority 3".

In pie chart form, and depicting only the "Priority 1" solutions:

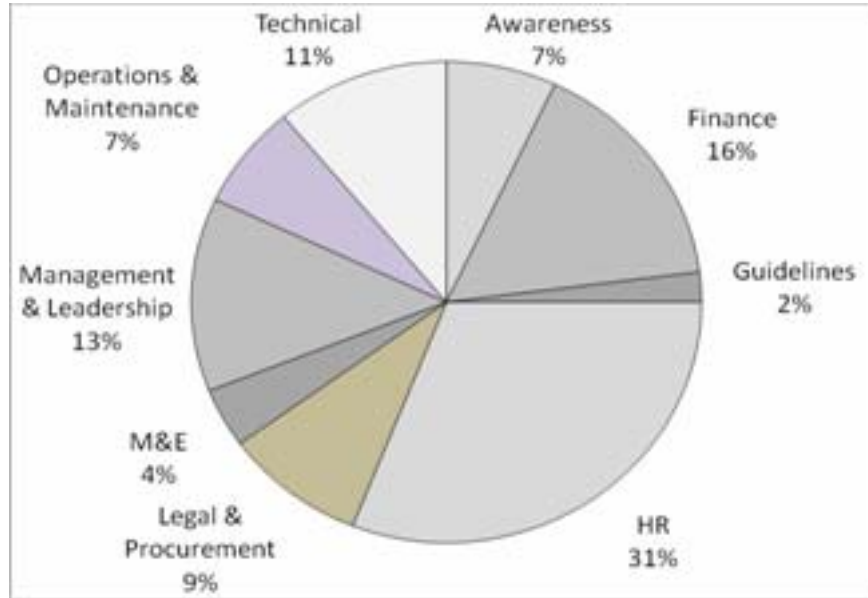


Figure 1: Identified solutions: "Priority 1"

The above indicates that much needs to be done on the human resources, skills development and capacity building aspects. While the focus of capacity building is on water services institutions capacity, capacitation must also include DWAF and other national and provincial roleplayers that have to manage the process and regulate effective service delivery.

Management and leadership is another important area. Specific actions need to be taken by DWAF as sector leader, and by water sector managers and their political leadership in general. To make a strategic intervention of this kind, it is essential that politicians and senior managers fully understand, appreciate and support IAM.

Financial solutions came up third in the order of frequency. This implies that finance, also, is a very important intervention area and a key success factor for sustainable IAM. The solutions include, amongst others, improved budgeting and allocations for IAM, financial incentives for effective IAM performance, cost recovery, and various other planning, regulation and administration issues.

Given the way in which the solution types were defined, and that operation and maintenance problems the direct result of skills or leadership problems were counted under "human resources" or "leadership" and not under "operation and maintenance", that "operation and maintenance" as a class of solutions ranked only fifth in frequency is not surprising. Other key "operations and maintenance" solutions can be found under finance, management and technical.

Responsibility leaders:

The way in which the Phase 2 analysis was done also enabled identification of the parties --

- with responsibility to lead the way forward for each solution, and
- that should be involved, or merely informed.

It emerged that WSAs have the leadership responsibility most frequently. WSAs are at the forefront of service provisioning and hence have to take a leading role in the operation and maintenance actions. There is much that many of them can do without outside assistance to improve their skills and institutional capacity and their financial capability.

DWAF has the next largest number of leadership responsibilities. DWAF's leading roles relate primarily to:

- high-level leadership and management

- capacity building and support to water services institutions (including technical support, training, monitoring and evaluation)
- the development of IAM systems, guidelines and other tools specific to the water services sector
- specific aspects of awareness, finance (e.g. tariffs & cost recovery) and operations.

DPLG has the next largest number, followed by National Treasury. DPLG has a leading role to play in the various capacity building aspects and the management and oversight of municipal administration. Many of these actions relate to municipality/WSA responsibilities, but DPLG is also key to ensuring integration of the water services infrastructure components with all other assets managed by municipalities. Hence this Department's leading involvement in the management and leadership, and legal and procurement, solution areas

THE CURRENT PHASE: PRIORITIES

DWAF's vision is that it, together with its strategic partners, will **empower and guide** water services institutions to practice sound infrastructure asset management (IAM), aimed at ensuring optimal utility from public investments in water services infrastructure, and the reliable and sustainable meeting of service delivery obligations.

The **objective** of the National Water Services Infrastructure Asset Management Strategy (hereinafter abbreviated as the "Water IAM Strategy" or, simply, "the Strategy") is to achieve the following **outcomes**:

- Address service delivery failures in targeted water services institutions in the short term, and effect improvements that can be publicised in order to demonstrate the benefits of IAM.
- Develop in the water sector in the longer term of a culture of sustained improvement in IAM.

The Strategy has therefore set out at a high level how this objective will be achieved by DWAF and its strategic partners. In particular, it is on track to:

- Define the practice of IAM, and outline the principles of good IAM, in particular in respect of water services infrastructure.
- Outline what will be done to support water services institutions in adopting this good practice – inter alia through sector-specific guidelines, skills development and related planning, control and knowledge management tools.
- Outline what will be done to address water services delivery failures in targeted institutions in the short term.
- Outline what will be done to publicise improvements resulting from the above, and to disseminate information.
- Outline what will be done to facilitate the development of a culture of sustained improvement in the water sector in the longer term.
- Identify major impediments to the application of sound IAM practices, and outline what will be done to engage with strategic partners and other key stakeholders in order for DWAF, together with these partners and stakeholders, to address these impediments.
- Outline what will be done to raise the profile and priority of IAM, and especially water services IAM, in municipalities and water boards, and in other stakeholders key to water services IAM.
- Outline what will be done to determine regular milestones for assessment of water services reliability and sustainability, and in particular IAM performance, and what will be done to monitor progress towards these.

The Strategy identifies the "what and who" that needs to be done (but not the "when") in respect of each important action. The Strategy outlines a suite of instruments designed to achieve the "outcomes" quoted above – including both a facilitative approach (through empowerment and guidance) and an approach that relies on monitoring and regulation.

While the Strategy is firmly focussed on water services, linkages between the Strategy and water resource IAM initiatives must, in the broader interest of the water sector and consumers, be forged, and good IAM practices pursued across the whole of the water sector, water resources included.

DWAF is leading the more in-depth determination, and subsequent programming and implementation, of the required actions, taking responsibility for those that are within its power to do so, and working closely with other national government departments where responsibility for the envisaged action is statutorily with those departments. In all of this, DWAF is cooperating with the key stakeholders, which include not just National Treasury and other government departments, but also other spheres of government, and local government and other associations. Overarching that, the context of the Water IAM Strategy described in this document is that it is one of a number of national IAM initiatives, planned to complement each other.

The most important principles underlying the Water IAM Strategy are:

- This is a Strategy that seeks to empower and guide water services institutions to improve IAM.

- This is the high-level water sector Strategy, complementing NMS and the high-level IAM strategies of DPLG and National Treasury, with which it is in harmony.
- 80/20 rules throughout, and “quick and rough” actions are often preferred.
- One size does not fit all.
- Start with the basics, and get them right. Do not attempt to progress further until the basics are right. In almost all circumstances, “good” practice is needed, not “best”.²
 - Address the weakest links in turn -- and as each is improved and is no longer the weakest link, attend to the new weakest link.
 - Where there is a strength, support it, and build on it.
- IAM is not a once-off intervention. It must become ingrained in the operational processes of the water services institution -- not an external intervention, but part of the institutions’ standard operating procedure.
- DWAF and its strategic partners must deliver what they undertake to do – many in the sector will be heavily dependent on this.

The most important actions needed have been identified on the basis of extensive investigation of water services IAM practices and the state of water services infrastructure. Whereas the primary source has been the investigations undertaken for the purposes of Phases 1 and 2, the experience in respect of water services IAM of DWAF itself and its external team and strategic partners has also been taken into account.

To emphasise: the foundation of the Strategy is the rigorous process of fact-finding and analysis that preceded its formulation.

The most important actions are:

- Create awareness. Start with issuing a water services IAM policy statement and with priming the sector.
- Scan and analyse IAM initiatives other than those of DWAF, and also other initiatives for support to water services institutions, and achieve synergy with these where appropriate.
- Review existing water services monitoring and evaluation. Extend monitoring and evaluation coverage before increasing depth. Outline how regular milestones for assessment of water services reliability and sustainability, and in particular IAM performance, will be determined, and how progress towards these in particular will be monitored.
- As quickly as possible --
 - # Set out in sufficient detail the criteria for selection of water services institutions for priority attention from DWAF and its strategic partners, and for identification of the specific actions in respect of each -- and prioritise.
 - # Also set out the information requirements of the selection process, and create appropriate links to the existing and evolving databases identified for this purpose.
 - # Initiate the selection process, select, and programme the work for the first year or other period decided upon -- also resource it.
 - # Then commence implementation.
- In this --
 - prioritise quickwins (not “prioritise the worst cases” -- not necessarily the same thing, although it could be in some instances)
 - prioritise actions, focused on the specific problems, in respect of a small number of the very worst crisis cases.
- Make it clear to institutions what they are expected to do for themselves, and what they can get assistance with.
- In all these, address the basics first, and get them right. And, in addressing the basics, prioritise attention to the weakest links among the basics.
- Define and structure incentives for water services IAM. Tighten the regulatory process, and build on existing corporate and individual incentives (such as levying penalties for non-compliance, enforcing skills level requirements, and offering assistance to those institutions willing to improve).

² “The best is the enemy of the good”. (Voltaire)

- Identify, adapt if necessary, and prioritise utilisation of existing tools, such as guidelines and systems, that are required for each level of need. Identify the further tools needed, and start the process of developing these, together with means for their use.
- Discover, select, organise, and disseminate good practice in water services IAM, so that the good practice lessons are put to good use.
- Facilitate where advisable bringing needed skills to bear through outsourcing.
- Assess the most frequently encountered procurement and outsourcing obstacles to bringing the needed resources to bear on improvement, and, where advisable, resolve these. Also assess the advantages and disadvantages of, and opportunities for, outsourcing.
- Review the content of and the relationship between IDP, WSDP and IAM, prioritise, and rationalise -- in respect of what government expects in the general case, but also, in the course of time, in respect of each municipality.
- Where unsustainability and/or unviability of institutions is shown to be a significant factor retarding IAM, start the process of addressing this.
- Analyse skills resources in the sector, decide on required actions, and start the process of resolving this.
- Discover, through pilot implementation, the resources that are required for institutions to be able to undertake sound water services IAM.
- Draw up a pro forma recovery plan.

NIMS identifies many actions similar or complementary to these³, as do other national non-water IAM initiatives, and it is essential that all these actions to the same end seek synergy where it would be efficient and effective to do this.

In all of the actions, "the most important principles" must be followed, especially

- "start with the basics, and get them these right -- do not attempt to progress further until the basics are right" and
- "one size does not fit all".

The "most important actions" listed above constitute a set, the carefully considered final output of an extensive water services infrastructure asset management investigation. All must be proceeded with if water services infrastructure asset management is to improve significantly. None must be omitted or put on hold for an indefinite period. Putting some on hold would jeopardise progress with others.

DWAF does not have the mandate or resources to address all of them. Some of them, entirely or partially, are the responsibility of other parties to resolve -- DWAF should only seek to influence what must be addressed, and its outcome. The issue of procurement, for example, sits squarely with other national government departments (DPLG and National Treasury, in particular). For another example, whereas DWAF needs to assist with the devising of appropriate norms for budgeting for water services IAM, the financial situation of water services authorities, and regulation of their budgets, is the responsibility of National Treasury -- not of DWAF.⁴

The Strategy, at the time of writing (February 2008) in final draft, spells all of the above in some detail -- space in this paper does not permit reproducing this.

³ Particularly of interest here are the National Infrastructure Maintenance Strategy programme of actions in respect of: strengthening the regulatory framework governing planning and budgeting for infrastructure management, requiring that skilled staff manage the planning and implementation of IAM programmes, identifying key strategic infrastructure, developing norms and standards for the maintenance of infrastructure, identifying actions to address skills shortages, and building the maintenance sector within the construction industry (and inter alia attending to procedures for procurement). (DPW et al 2006)

⁴ For yet another example: If the water services IAM Strategy needs performance measures, and performance measurement is being addressed outside of water services IAM specifically, then the water services IAM needs must be incorporated in this other initiative, and also DWAF should seek to influence that initiative to get the outputs that it (DWAF) needs.

The Strategy acknowledges "that water services authorities, being municipalities or combinations thereof, have a range of responsibilities other than water services responsibilities".

It will no doubt assist progress towards improved water services IAM that there currently is –

- growing recognition on the part of national and provincial government of the serious problems facing many water services institutions, and of the necessity for water services IAM improvement – if necessary, through intervention from outside the institutions; and
- increasing public pressure for improvement in service delivery – including for improvement in delivery by existing infrastructure.

Finally, and very important:

- whereas the emphasis of the Strategy, and of the "most important actions" listed, is generally on practices establishment and improvement, with the assumption that the state of water services infrastructure and the state of its management will as a direct result improve;
- it is acknowledged that in many cases the infrastructure asset decay is so serious that direct intervention by national government, for example of a capital works nature (e.g. complete refurbishment of the asset, or even its replacement), would first be necessary.

WAY FORWARD

This high-level draft Water IAM Strategy will during April be presented to a second meeting of the reference group, again bringing DWAF together with experts from, among other institutions, National Treasury, DBSA, WRC, Rand Water Services and Johannesburg Water.

Once this Strategy has been approved by the reference group and has received the official DWAF stamp of approval, the next step is to set out the implementation plan and programme. This step, which has already commenced, will in broad terms identify not just the "what and who", but also the "when", and will indicate prioritisation in terms of both urgency and importance. It will also indicate the "how", including tactics, culture and incentives, and it will identify key performance areas and will set key performance indicators.

These details of selected aspects of the plan and programme are being formulated with the assistance of an external team and with the involvement of key sector partners such as DPLG, National Treasury, DPW, SALGA and the WRC, and taking into account the roles of the various water services institutions. Cognisance is being taken of the main other national IAM initiatives, and how they are complementing achievement of the objectives of DWAF. The result will be an integrated and co-owned implementation framework.

The presentation at the conference will update the audience with progress in respect of this work.

CONCLUSION

It is timely that increasing attention is being paid to water services IAM. The recent work by DWAF and others in discovering and documenting the poor state of so much water services infrastructure is serving to underline the importance of the DWAF water services IAM Strategy, and the need that it be programmed and budgeted for, and implemented without delay. The appearance of this draft Strategy, a key milestone signaling DWAF's determination that increasing attention be paid to water services IAM, is timely.

The National Water Services Infrastructure Maintenance Strategy will promote sound management of infrastructure and facilities across the whole of the water sector. Measures that will be implemented include strengthening the management and water service performance and governance framework, and requiring infrastructure asset management planning and linking this to budgets. They also include assisting institutions to develop the required maintenance management capacity, and monitoring progress and feeding this into a process of continuous improvement.

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